

yet started by means of "Butterfly Books." I would appeal to every thinking lepidopterist to discountenance the use of erroneous generic names such as *Acronycta*, *Xylina*, *Erastria*, *Teniocampa*, in order to spare future students from the necessity of a more troublesome change. It has come to such a pass in Europe that the names for genera are largely wrong, and that in England one set of names (Guenée's in the main) are used, on the Continent another (Lederer's in the main). I have made the effort from the first, and as soon as I saw (1873-4) that the nomenclature was improperly founded, to restore the proper generic titles. A heavy responsibility rests on those who, unable to furnish any but subjective and erroneous arguments, try to overturn this work. For it must ultimately obtain, but not, perhaps, until the wrong names have permeated literature and produced confusion. The authors of this confusion are then Messrs. Lintner, Smith and their followers, and time will place them in this position if they persist. But it is yet time. Nothing but the most tentative work has yet been published on these families. The species have been barely covered with titles. All the "Revisions" are so faulty in almost every respect that they will soon be revised. Let us then clear the track of wrong generic titles and refuse to enter into the inheritance which modern European literature offers us. Each genus must have its exact type, and the oldest generic names, irrespective of persons, must prevail.

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## EARLY STAGES OF SOME BOMBYCINE CATERPILLARS.

By A. S. PACKARD.

The following observations were made during the summer of 1894, and I desire to express my indebtedness to Mr. William Dearden, of Providence, who kindly furnished me with the eggs of certain of the species.

### ***Perophora melsheimerii*.**

The eggs were received from Mr. H. Meeske, of Brooklyn; they hatched in Providence, R. I., June 21, 22.

*Larva, Stage I.*—Length 3 mm. Head and prothoracic shield of the same width, being as wide as the body in front, which slightly tapers toward the end from the middle of the body; they (head and

shield) are dark pitchy blackish chestnut, and the surface rough. The body is dark chestnut brown, behind a little paler, and beneath paler. The antennæ are long and blackish-brown, as are the thoracic legs. The sides of the abdominal segment are swollen, and the segments appear as if frosted over, the skin being rough as if shagreened with fine white granulations. There are faint traces of a slight dorsal line on the posterior half of the abdominal region.

In a few days, nearly a week, after hatching, a median yellowish dorsal line becomes distinct.

When first beginning to feed after hatching it simply loosely fastens two leaves together with silk threads, and feeds like a Tineid larva, not making a case. The specimens died before molting.

### **Clemensia albata.**

The eggs were sent me from Providence July 26, by Mr. Dearden. They hatched at Brunswick, Maine, Aug. 8, in the morning. The food plant is unknown; the larvæ would not eat willow, poplar or lichens. The eggs are oval, covered with white hair and are laid in groups of five or six.

*Larva, Stage I.*—Length 1.8 mm. Head a little wider than the body, the vertex convex on each side, the two halves of the epicranium being like two contiguous orbicular pieces, and dark, dusky amber in color, the head in front, lower down, paler. Body moderately long, cylindrical, the segments unusually convex, whitish greenish in front. The hairs, which arise from minute one-haired tubercles, are of nearly uniform length on the back and sides of the body; they are two-thirds as long as the segments are thick, finely spinulate.

### **Hypercompa fucosa.**

The eggs were laid at Providence July 20, and hatched at Brunswick July 30.

*Larva, Stage I.*—Length 2 mm. Head a little wider than the body, dark chestnut. Body white, moderately stout, with small one-haired tubercles of the same color as the body. The hairs are rather thick, of uniform length, not quite so long as the body is thick, and both dark and light. The subdorsal row of tubercles are double, or rather there are two contiguous tubercles on each abdominal segment in this row, each sending off a hair.

### **Callimorpha lecontei.**

The eggs were received from Mr. Dearden. It feeds on the apple; the larvæ hatched June 28—30 at Brunswick.

*Larva, Stage I.*—The larvæ when first hatched were almost indistinguishable from those of *Spilosoma congrua*, which hatched at the same date. The head is wider than the body, which is quite hairy and white. The head is pale amber with two brown spots on each side, or rather, nearly all are pale horn-brown. The tubercles all bear but a single hair, and are as long as the body is thick. It molted July 11.

*Stage II.*—Length at first 4 mm. Now the body is of the same general shape as before, but the head is black and the tubercles are black. The prothoracic plate is divided, and the other dorsal and lateral tubercles give rise to from five to six short black hairs, with some white ones.

*Stage III.*—(Described July 21-22). Length 7 mm. Body whitish with black tubercles and hairs much as before. There are now two faint straw yellow broad lateral bands extending down to the base of the abdominal legs. Also a double row of subdorsal dark brown spots on each side of the back, at the sutures, the central part of each segment being clear of markings.

August 14. The body is now 12 mm. in length, and above is much blacker; the straw yellow band on the side being now very conspicuous. The tubercles are dark metallic blue, and there are four dorsal black bands on a livid ground. It molted August 14.

*Stage IV.*—Length 12 mm. The body is now entirely black, with metallic blue tubercles; the hairs are of unequal length and black. There is a lateral row of straw yellow spots, the continuous band of the previous stage being broken in the middle of each segment. It is now a very handsome caterpillar. It molted September 1.

*Stage V.*—Length 14 mm. It has the same markings as in the previous stage, and the only difference is a slight increase in size.

*Stage VI.*—It molted again September 12-15, but presented no difference either in markings or size.

### **Spilosoma congrua.**

The eggs were received from Mr. Dearden June 27. The larva had in part hatched and were hatching June 30.

*Larva, Stage I.*—Body at first white except two dark spots on the head, but in a few minutes the latter became dark. Head wider than the body. The setiferous chitinous plates or flattened tubercles dusky and contrasting with the white body. Prothoracic plate divided. Under a  $\frac{1}{2}$  inch objective the dorsal and lateral tubercles of the abdominal segments bear but a single hair, which is finely spinulate, and as long as the body is thick.

**Arctia anna (persephone).**

The eggs were deposited by a female, collected June 11, and sent me by Mr. Dearden. I identified the moth from the Edwards collection in the American Museum of Natural History, New York. The eggs hatched about July 10 or 12. The female had a broad black margin on the hind wings, and a discal crescentiform spot, otherwise it was normal. Stage I was described July 13.

*Larva, Stage I.*—Length 2 mm. Body of the usual shape. Head dull amber, with two dusky spots on the vertex. Tubercles dark chestnut brown, those of the four dorsal rows of the abdominal segments bearing two setæ; the other tubercles, *i. e.*, those of the two lower rows, 1-haired. The hairs all dark, spinulate, about one-third as long as the whole body. The prothoracic plate is crescentiform. Thoracic legs amber-colored. It molted July 30, 31.

*Stage II.*—Length 6.5 mm. The tubercles now bear from 8 to 10 black setæ. Body pale; the large dorsal tubercles black, with minute black non-setiferous ones in front near the front edge of each abdominal segment. Lateral tubercles pale, of the color of the body, but with black setæ. Prothoracic shield small, dark, not conspicuous. Two long black hairs project beyond the others from the end of the body, and two similar ones from the side of the 8th abdominal segment. Head dark chestnut above, in front pale. Ground color of the body greenish, the tubercles yellowish. Thoracic and abdominal legs pale.

August 8th, it had not molted; length 10 mm. Now all the tubercles are black, and the skin is livid, with faint traces of two dorsal lines between the two rows of large dorsal tubercles, the lines enclosing the minute anterior tubercles.

After second molt, August 14. Length 10 mm. The body is now nearly concealed by the dense hairs. Head black. The hairs along the back black, those low down on the sides arising from the lowest row of tubercles snuff yellow.

**Arctia phyllira.**

The eggs were laid about June 17 at Providence and with the moth was given me by Mr. Dearden. The ♀ specimen was compared with those in the Edwards's collection in the American Museum of Natural History, and were nearly of the normal form. The eggs hatched June 20-21, and the larvæ were reared at Brunswick, Me.

*Larva, Stage I.*—Length 3 mm. They had been eating perhaps two days. The head was not so wide as the body and shining black. The body is deep, amber colored, the tubercles darker, dark brownish,

and rather large. The two median tubercles are minute, and the two subdorsal ones large. The two rows of small dorsal tubercles one-haired; those of the subdorsal row (or 3d row from below of the abdominal segments with legs) bearing each two hairs; the second dorsal row of 2d and 3d thoracic segments bearing each two hairs, but the next row beneath with one on the segments provided with legs. Hairs nearly twice as long as the body is thick; the dorsal hairs black and the lateral ones grayish. Thoracic legs dark amber brown. Abdominal legs amber, with an external dark piece. A distinct subcrescentiform dark conspicuous prothoracic plate. It molted July 7-8.

*Stage II.*—Length 6 mm. Head black. Dorsal tubercles black, with from ten to twelve black spinulated hairs. A dorsal median row of whitish spots beginning on the second thoracic segment, and a similar subdorsal line. The lateral tubercles dusky amber colored. The general hue of the skin dark amber. Prothoracic plate not very large, with dark dorsal tubercles. It molted July 10.

*Stage III.*—Length 7 mm. Head black, shining, not so wide as the body. The body now uniformly, with all the tubercles, shining black. A conspicuous median dorsal white band, the spots separate in stage II, being now smaller in proportion and connected, beginning as before on the 2d thoracic segment. A faint dark livid subdorsal line, at first not visible. About twelve spinulated pairs arise from the dorsal tubercles, and, like those of the others are all black, except an occasional small white one. It molted again July 17.

*Stage IV.*—Length 10 mm. Much as before though thicker, the body entirely black, with a whitish dorsal stripe; no definite subdorsal line, but the sides of the body between the tubercles are dull livid, the livid band enclosing three rows of tubercles, *i. e.*, the 2d, 3d and 4th from the dorso-median one.

July 21, it was 15 mm. long, though it had apparently not molted.

July 22, the pale subdorsal lateral band is whiter than before; this band extends underneath around the body, enclosing four rows of tubercles on each side, thus making a broad black band on each side of the median dorsal line. It molted July 25.

*Stage V.*—Length 15-16 mm. It is now deep black; the dorsal stripe now distinctly whitish yellow and narrow, with a broad black band on each side. The sides of the body are darker livid than before, the livid hue less apparent. The upper row of subdorsal tubercles are pale, shining, glistening at the end, and black below. Thoracic legs black; abdominal legs pale. It molted again July 31.

*Stage VI.*—Length 16–17 mm. Same as in stage V; described August 1st. The three lateral rows of tubercles are now dull amber brown, and of the same hue as the abdominal legs. It molted again August 15.

*Stage VII.*—Length 20–22 mm. Of the same appearance as before but the three rows of dorsal and subdorsal tubercles on each side are pale whitish clay color; the dorsal median hue is conspicuous, being yellow as before.

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## PRELIMINARY HAND-BOOK OF THE COLEOPTERA OF NORTH EASTERN AMERICA.\*

(Continued from page 76.)

By H. F. WICKHAM.

### *Myas Dej.*

With most of the characters of *Pterostichus* this genus differs by having the terminal joint of the palpi dilated. There are no dorsal punctures. Two North American species are known which separate thus:

#### *Synopsis of Species.*

Larger, elytral striæ punctured,.....**coracinus.**  
Smaller, elytral striæ not or very obsoletely punctured,.....**cyanescens.**

**M. coracinus Say.**—Black, elytra purplish; thorax large, transversely quadrate, front angles rounded, hind angles rectangular, margin purplish. Elytra broad with acute striæ which are finely punctured. Length, .72—.80 in.=18–20 mm.

*Habitat:* New York, New Jersey, Ohio.

**M. cyanescens Dej.**—Smaller than *coracinus* and with smoother striæ. Thorax not depressed at sides as in that species and with deeper basal impressions. Length, .52—.60 in.=13–15 mm.

*Habitat:* New York, New Jersey, Wisconsin. Found under logs in deep woods in July.

\* Mr. Wickham kindly consented to aid us with the Hand-Book, as has also Mr. Roland Hayward, who will furnish a synopsis of the genus *Bembidium* for the March number. (W. B.)